

October 19, 1951.

Dr. H. P. Treffers,
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New Haven 11, Connecticut.

Dear Peter:

Our most recent letters must have crossed in the mails. Yours of the 17th just now arrived.

I am very glad, of course, that our results now coincide. This should clear the field somewhat. We ought to follow up the role of M_s^+ in the spontaneous and perhaps radiation-induced mutations to S^r in our standard stocks, and this should not interfere with your continued study of the peculiarities of 58-278. It would be most interesting if the effect of M_s^+ is not confined to the S locus. My own pet hypothesis (which would take some fancy, probably impractical, experiments to test) is that $S^r M_s^-$ is merely inviable, so that mutations from S^s to S^r in an M_s^- genotype are simply undetected. Esther would have been especially interested in this when she was working on her Ph.D. thesis, which had to do with just such mutability interactions involving Lac/. But all her cases turned out to be just such phenotypic interactions.

Your crosses of $S^r \times S_a^r$ look very much as if resistance to substituted am were allelic to standard S^r . It occurs to me that the replica-plating technique would be ideal for testing prototrophs from such crosses on a large scale. The cross plates, if not too crowded, could be replica-plated directly to sm-minimal agar to look for S^s recombinants. In just this form, it has worked very well for us, (in $S^r \times S^s$). A brief ms. on the method (in press in J. Bact.; also M.G.B.) is enclosed: might I have it back in a few weeks?

Mainly to provide material for more ethereal studies (triploidy in $2n \times 2n$ crosses) I have been looking into multiple alleles, for which the S is one of the best loci. If substituted-streptomycin resistance turns out to be another allele, and when you have quite completed your studies, could you give me the details on it for this purpose? For the time being, S^r , S^s and S^d heterozygotes provide ample material, but S^d has some disadvantages.

Sincerely,

Joshua Lederberg.